

Environmental Health and Biological Science

Health Education · Answer Key · 10 Questions

1. Which specific substance found in the skin of the Golden Poison Frog (*Phyllobates terribilis*) is a potent sodium channel blocker that causes rapid cardiac failure in humans?

A) Batrachotoxin

- B) Tetrodotoxin
- C) Bufotoxin
- D) Aflatoxin

2. What is the primary mode of transmission for the Hantavirus pulmonary syndrome, which is typically contracted from the excreta of the deer mouse (*Peromyscus maniculatus*)?

A) Vector-borne via tick bites

B) Inhalation of aerosolized viral particles

- C) Consumption of contaminated water
- D) Direct transmission via insect sting

3. Which environmental heavy metal, often biomagnified in apex predator fish like swordfish, is a known neurotoxin that causes Minamata disease?

- A) Lead
- B) Cadmium
- C) Arsenic

D) Methylmercury

4. The causative agent of Lyme disease, *Borrelia burgdorferi*, is primarily transmitted to humans through the bite of which genus of tick?

A) Dermacentor

B) Ixodes

- C) Amblyomma
- D) Rhipicephalus

5. Which organ in the human body is primarily responsible for the metabolic transformation of polycyclic aromatic hydrocarbons (PAHs) found in polluted air and charcoal-grilled foods?

A) Spleen

B) Liver

- C) Pancreas
- D) Gallbladder

6. In environmental medicine, what effect does the bioaccumulation of organochlorine pesticides (like DDT) have on the shells of predatory birds?

- A) Increased pigmentation
- B) Enhanced thickness
- C) Eggshell thinning**
- D) Accelerated hatching

7. Which common environmental fungal pathogen, found in bird and bat droppings, is responsible for the respiratory disease known as histoplasmosis?

- A) Histoplasma capsulatum**
- B) Aspergillus fumigatus
- C) Candida albicans
- D) Cryptococcus neoformans

8. What is the clinical significance of the neurotoxin domoic acid, produced by certain marine diatoms (Pseudo-nitzschia) and accumulated in shellfish?

- A) Amnesic shellfish poisoning**
- B) Paralytic shellfish poisoning
- C) Diarrhetic shellfish poisoning
- D) Ciguatera fish poisoning

9. Which specific botanical toxin is found in the castor bean (Ricinus communis) and functions by inhibiting protein synthesis via ribosomal inactivation?

- A) Muscarine
- B) Ricin**
- C) Strychnine
- D) Aconitine

10. Exposure to high levels of environmental fluoride during enamel formation leads to which irreversible condition?

- A) Dentinogenesis imperfecta
- B) Dental fluorosis**
- C) Periodontitis
- D) Enamel hypoplasia